CLASSROOM ACOUSTICS

Classrooms are noisy environments. As we all know, audition is essential for learning. High levels of noise and reverberation reduce the quality of audition for all students; especially those relying on amplification. If students are unable to hear the teacher, then language development and educational achievement are adversely affected. Efforts must be made to manage situations that result in adverse signal-to-noise ratios.

The source(s) of classroom noise may be internal or external. The noise generated in the classroom includes students talking, desks or chairs sliding on non-carpeted flooring, and shuffling books and papers. This noise is typically the most detrimental to the child, because this form of noise is spectrally similar in frequency to the desired signal which is the teacher=s voice.

Externally generated noise comes from sources such as hallway traffic, heating and air conditioning systems, or noise emanating from large assembly areas such as gymnasiums, playgrounds or cafeterias. All of these noise sources affect speech recognition in the classroom.

Taking steps to improve the acoustical properties of the classroom may help to provide an adequate, if not optimal listening environment. Some ways to eliminate external noise sources include locating classrooms of children with hearing loss away from playgrounds and other noisy areas. Strategic landscaping, such as planting trees and shrubs and /or earthen banks also acts as an effective noise buffer. Further classroom acoustical treatments include the use of heavy carpeting, or if carpeting is not an option, tennis balls on the feet of desks can be used. Thick curtains and unpainted acoustical wall and ceiling panels will help reduce the undesirable noise and reverberation. Soundfield systems can also improve room acoustics. They can consist of ceiling mount, multiple speaker systems, or toteable systems.

EQUIPMENT MANAGEMENT

When the FM equipment is returned from summer service, it should be inventoried, assigned to students and distributed. Teachers should be inserviced on the use and care of the equipment. All FM equipment worn by students should be monitored periodically by the audiologist. Monitoring entails daily listening checks by someone at the school. When a unit fails, it will be sent in for repairs. Whenever possible, a replacement unit should be provided for the student=s use. At the end of the school year, the equipment is collected, inventoried and sent to the manufacturer(s) for summer service.

Other equipment essential to the provision of audiological services includes audiometers, otoacoustic emission screeners, impedance bridges, real ear analysers, etc. This equipment should be calibrated annually.

CALIBRATION

Audiometers must be calibrated annually. Theere are companies that can be contractged to provide this service. This is mandatory. It is especially essential for portable audiometers that are bumped around in transport. If an audiometer is not calibrated, test results will be invalid.

INSERVICE TRAINING

In order to ensure successful usage of the FM equipment, the students, teachers and related service personnel must be trained in the appropriate use of the devices. At the elementary level, fewer staff members are involved. At the middle and high school levels, the student is in contact with more teachers, so scheduling inservice meetings is more challenging.

SERVICE CONTRACTS

Service contracts are available from most vendors. They may seem expensive, but the service provided annually can lengthen the life of the equipment. In addition, repairs needed during the school year are typically covered at no additional cost. Usually, as the equipment ages the cost of the service contract increases. At some point you may choose to eliminate your older units from the service contract and just pay for repairs as needed.